

REMARKS

The Examiner rejected claim 8 under 35 U.S.C. §112 as being indefinite due to the trade names used in the claim to describe the aliphatic hydrocarbon solvents. Applicants have cancelled claim 8, thereby making the Examiner's rejection moot.

The Examiner rejected claims 1-10 under 35 U.S.C. §103(a) as being unpatentable over WO 02/102942. Applicants respectfully disagree.

Applicants have amended claim 1 to specify the aliphatic hydrocarbon solvent has a flashpoint of about 120°C or higher. Support for this amendment is given on page 6, lines 16-25 of the specification. As a consequence of this amendment, claims 6 and 7 have been cancelled.

The Examiner contends that WO 02/102942 discloses a fuel additive detergent composition comprising a succinic acylating agent/amine reaction product, where the fuel has a sulphur content of 0.002% by weight or less, and where the additive may also include an aliphatic hydrocarbon solvent. The Examiner notes that WO 02/102942 fails to teach the sulphur content or flash point of the solvent, but concludes the skilled artisan would have chosen a low sulphur or sulphur free solvent and would have chosen a solvent with a high flash point, thus making Applicants' claimed invention obvious under the reference. Applicants respectfully disagree.

WO 02/102942 discloses fuel compositions containing a detergent/dispersant additive prepared by reacting an amine with hydrocarbyl substituted acylating agent in a solvent containing (i) quantities of sulphur above Applicant's claimed range (such as 330 neutral mineral oil, used in Example F of the reference) and/or (ii) an aromatic solvent including Solvesso® (a high boiling point aromatic solvent, used in Example G of the reference). In contrast Applicants' present invention requires that the medium substantially free of to free of sulphur is an aliphatic solvent with a flash point of 120°C or higher. Furthermore, the Applicants have unexpectedly discovered improved performance of a fuel composition prepared from a detergent/dispersant additive formed in an aliphatic hydrocarbon solvent with a flashpoint of about 120°C or higher. The improved performance is demonstrated by the XUD-9 test data in the attached declaration by Dr. John K. Pudelski, an inventor of the present invention.

WO 02/102942 does not teach, suggest or otherwise disclose preparing a detergent/dispersant additive for a fuel composition requiring such a solvent. Furthermore, given the limited teachings of the reference with regard to the solvent employed in preparing a fuel detergent/dispersant additive, a person skilled in the art would have no expectation that a medium substantially free of to free of sulphur, where that medium is an aliphatic solvent with a flash point of 120°C or higher, would have improved

performance over the solvents taught by the examples in WO 02/102942. The data in the declaration referenced above demonstrates these surprising results. Therefore, the Applicants submit that the present invention is both novel and non-obvious over the prior art. Consequently Applicants' respectfully request the Examiner to withdraw the §103(a) rejections.

Applicants have also added new claim 20, which claims a fuel composition, comprising: (a) a medium substantially free of to free of sulphur, (b) a detergent/dispersant additive, and (c) a liquid fuel; wherein the medium substantially free of to free of sulphur is an aliphatic hydrocarbon solvent, and the aliphatic hydrocarbon solvent is present from at least about 50 wt % to about 100 wt % of the total amount of the medium; wherein the detergent/dispersant additive comprises: (1) a hydrocarbyl-substituted amine, (2) a hydrocarbyl-substituted hydroxy aromatic compound, (3) a Mannich reaction product, or (4) mixtures thereof. Support for this claim is found in claim 1 as well as at page 3, lines 23-29 and page 8, lines 19-26 of the specification.

Applicants point out that WO 02/102942 discloses a fuel additive composition that comprises a reaction product of an aliphatic hydrocarbon substituted succinic acylating agent and polyamine (see page 3, lines 5-7 of WO 02/102942). In contrast, Applicants' new claim 20 requires a detergent/dispersant additive where the additive comprises: (1) a hydrocarbyl-substituted amine, (2) a hydrocarbyl-substituted hydroxy aromatic compound, (3) a Mannich reaction product, or (4) mixtures thereof. Applicants' respectfully submit that WO 02/102942 does not teach, disclose or suggest the detergent/dispersant additive required by claim 20. Therefore, claim 20 is both novel and non-obvious over the prior art and Applicants' respectfully submit that any rejection based on WO 02/102942 would be improper.

Therefore, in light of the above amendments and remarks, it is respectfully submitted that all claims are novel and non-obvious over the above mentioned prior art reference and the rejections should be withdrawn.

For the foregoing reasons it is submitted that the present claims are in condition for allowance. The foregoing remarks are believed to be a full and complete response to the outstanding office action. If the Examiner believes that only minor issues remain to be resolved, a telephone call to the Undersigned is suggested.

Any required fees or any deficiency or overpayment in fees should be charged or credited to The Lubrizol Corporation Deposit Account No. 12-2275.

Respectfully submitted,

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